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	Re: 09/814,226		
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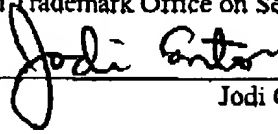
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Attorney Docket No.: 100794-11694 (FUJI 18.488)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Filed: March 21, 2001

Title: TELECOMMUNICATIONS APPARATUS AND PLUG-IN UNIT
FOR SAME

Examiner: Ramnandan P. Singh

Group Art Unit: 2646

September 16, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Sir:

In response to the final Office Action dated June 16, 2005, please amend the above-referenced parent application as follows:

84075541_1.DOC

1. (currently amended) A telecommunications apparatus comprising:

a substantially box-shaped subrack having a back wiring board mounted with first connectors;

a plurality of shell-type plug-in units, accommodating electronic elements, configured to be inserted into the subrack so that a second connector of each of the plug-in units is connected to a corresponding one of the first connectors; and

a flexible, electrically conductive seal member disposed between a lateral surface of the plug-in units that are inserted into the subrack and an interior portion of the subrack, said seal member being elastically deformed when a plug-in unit is inserted into the subrack and the second connector thereof is connected to the corresponding first connector so as to enclose both first and second connectors to provide a shield.

2. (currently amended) A telecommunications apparatus comprising:

a substantially box-shaped subrack including a back wiring board having a surface mounted with first connectors; and

a plurality of shell-type plug-in units, that are accommodating electronic elements, and configured to be inserted into the subrack so that a second connector of each of the plug-in units is connected to a corresponding one of the first connectors;

wherein the subrack further comprises:

a substantially square metallic frame member,

a plurality of panes aligned within the frame so as to form substantially rectangular openings that accommodate and surround first connectors between adjacent panes, and

a flexible, electrically conductive seal member covering the frame member and the panes,

wherein the frame member is fixedly mounted on the surface of the back wiring board,
wherein a portion of a lateral surface of the plug-in unit that is inserted into the subrack
and surrounding each second connector pressing against the frame member so as to elastically
deform the seal member and close the openings when the plug-in unit is inserted into the
subrack, and thereby to enclose the first and second connectors to provide a shield.

3. (currently amended) The telecommunications apparatus as claimed in claim 2,
wherein:

the openings in the frame member are oblong shaped; and

the seal member has a flange portion on a side of the seal member ~~opposite an inserted~~
~~end of the plug-in unit~~ confronting the surface of the back wiring board,

the flange portion entering an interior of the oblong opening.

4. (previously presented) The telecommunications apparatus as claimed in claim 2,
wherein:

the openings in the frame member are oblong shaped;

the seal member has a flange portion on a side of the seal member confronting the surface
of the back wiring board, the flange portion entering an interior of the oblong opening; and

a lateral surface of the plug-in unit that is inserted into the subrack and that surrounds the
plug-in unit connector having an oblong banked portion tapered at a periphery thereof,

the tapered surface of the oblong banked portion pressing the flange portion of the seal
member, the seal member elastically deforming so as to conform to the tapered surface when the
plug-in unit is mounted in the subrack.

5. (previously presented) The telecommunications apparatus as claimed in claim 2,
wherein:

the seal member comprises a flange portion, provided on a surface of the seal member confronting the surface of the back wiring board[[.]] and projecting from an edge of the oblong opening,

the flange portion being pressed against the surface of the back wiring board and elastically deformed when the frame member is fixedly mounted on the back wiring board.

6. (previously presented) The telecommunications apparatus as claimed in claim 2,
wherein:

the seal member comprises, on a surface of the seal member confronting the surface of the back wiring board, a first flange portion projecting from an edge of the oblong opening, and a second flange portion projecting from a periphery of the frame member,

the first and second flange portions being pressed against the surface of the back wiring board and elastically deformed when the frame member is fixedly mounted on the back wiring board.

7. (currently amended) A telecommunications apparatus comprising:
a substantially box-shaped subrack including a back wiring board having a surface mounted with first connectors; and

a plurality of shell-type plug-in units, accommodating electronic elements, configured to be inserted in the subrack so that a second connector of each of the plug-in units is connected to a corresponding one of the first connectors of the subrack[[,]];

wherein the subrack further comprises:

a substantially square metallic frame member, and

a plurality of panes aligned within the frame member so as to form substantially rectangular openings that accommodate and surround the first connectors between adjacent panes, the frame member being fixedly mounted on the surface of the back wiring board,

wherein the plug-in unit has a flexible, electrically conductive seal member shaped so as to surround each second connector, and

the seal member is elastically deformed so as to contact the frame member when the plug-in unit is mounted in the subrack, and thereby to enclose the first and second connectors to provide a shield.

8. (currently amended) A telecommunications apparatus comprising:

a substantially box-shaped subrack including a back wiring board having a surface mounted with first connectors; and

a plurality of shell-type plug-in units, accommodating electronic elements, configured to be inserted in the subrack so that a second connector of each of the plug-in units is connected to a corresponding one of the first connectors of the subrack, each plug-in unit including:

a flexible, electrically conductive seal member shaped so as to surround the second connector,

wherein the seal member is elastically deformed so as to contact the back wiring board

when the plug-in unit is mounted in the subrack, and thereby to enclose the first and second connectors to provide a shield.

9. (previously presented) The telecommunications apparatus as claimed in claim 1, wherein the seal member is made of a material selected from a group consisting of electrically conductive rubber, electrically conductive elastomer, electrically conductive sponge, electrically conductive plastic, electrically conductive gel rubber, electrically conductive silicon rubber, and dispenser gaskets.

10. (currently amended) A telecommunications apparatus comprising:

a substantially box-shaped subrack including a back wiring board having a surface mounted with first connectors; and

a plurality of shell-type plug-in units, accommodating electronic elements, configured to be inserted in the subrack so that a second connector of each of the plug-in units is connected to a corresponding one of the first connectors, the subrack further including:

a substantially square metallic frame member;

a plurality of panes aligned within the frame so as to form substantially rectangular openings that accommodate and surround each second connector between adjacent panes, the frame member being fixedly mounted on the surface of the back wiring board; and

a seal member comprising a core spring member, a finger gasket that engages the core spring member and an electrically conductive cloth wrapped around the finger gasket, the seal member being mounted on inner sides of the frame member openings so as to extend over an entire interior surface of said openings,

wherein each plug-in unit has a cover part shaped so as to conform to the frame member openings and surround the second connector on a lateral surface of the plug-in unit inserted into the subrack, edge surfaces of the cover projecting beyond edges of the second connector, and

wherein the cover part is fitted into the frame member openings when the plug-in unit is inserted into the subrack so as to elastically deform the finger gasket, so that an elastic force of the elastically deformed finger gasket causes the electrically conductive cloth to contact the cover part along an entire outer peripheral surface of the cover part and provide a shield for the first and second connectors.

11. (currently amended) A shell-type plug-in unit comprising:

a metal casing, ~~containing a printed board therein~~ accommodating electronic elements, and configured to be inserted into a substantially box-shaped subrack having a back wiring board that is mounted with first connectors and a flexible electrically conductive seal member; and
a second connector configured to be connected to a corresponding one of the first connectors when the metal casing is inserted into the subrack;

wherein said metal casing has a lateral surface surrounding the second connector and has a substantially oblong banked portion with a tapered periphery, the tapered periphery statically deforming the seal member when the plug-in unit is inserted into the subrack, so as to enclose the first and second connectors to provide a shield.

12. (currently amended) A shell-type plug-in unit comprising:

a metal casing, ~~containing a printed board therein~~ accommodating electronic elements including a photoelectric conversion module, and configured to be inserted into a substantially

box-shaped subrack having a back wiring board that is mounted with first connectors;

a second connector configured to connect to a corresponding one of the first connectors when the metal casing is inserted into the subrack; and

an electrically conductive optical fiber seal member having a through-hole of a size capable of admitting an optical fiber and a slit that extends from ~~an external unit to the through-hole to an outer periphery of the optical fiber seal member.~~

wherein the optical fiber seal member is compressed after the optical fiber is passed through the slit and fitted into the through-hole so as to engage an opening formed in the metal casing of a size capable of admitting a plurality of optical fibers extending from ~~a the~~ photoelectric conversion module ~~mounted on the printed wiring board,~~ to provide a shield with respect to the opening in the metal casing.

13. (currently amended) A shell-type plug-in unit comprising:

a metal casing, ~~containing a printed board~~ accommodating electronic elements therein, and configured to be inserted into a substantially box-shaped subrack having a back wiring board that is mounted with first connectors, and a frame member having openings exposing the first connectors;

a second connector configured to connect to a corresponding one of the first connectors when the metal casing is inserted into the subrack; and

a cover part shaped so as to conform to the openings and surround the second connector on a lateral surface of the plug-in unit, edge surfaces of the cover part projecting beyond edges of the second connector,

said cover part providing a shield for the first and second connectors when the metal casing is inserted into the subrack.